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February 6, 2004

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Via Overnight Delivery

RE: ***CZMA Consistency Appeal of the Islander East Pipeline Co., LLC***

Dear Mr. Blum:

Enclosed please find the State of Connecticut Department of Environmental Protection's final determination on the request of the Islander East Pipeline Company, LLC, for a certification of water quality under Section 401 of the Clean Water Act.

The State requests that this water quality determination be added to the record of the above-referenced proceeding as Item 51 of the State of Connecticut's Index to Record. An updated copy of the Index is included in this packet. This office shall file two additional copies with your office on Monday for overnight delivery.

Very truly yours,

David H. Wrinn

David H. Wrinn
Assistant Attorney General

DHW:mt

cc: Frank L. Amoroso, Esq.
enclosure

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

February 5, 2004

Mr. Gene Muhlherr
Islander East Pipeline Company, LLC
454 East Main Street, Route 1
Branford, CT 06405

RE: **WATER QUALITY CERTIFICATE APP. #200300937**
Towns: **Cheshire, Wallingford, North Haven, East Haven, North Branford and Branford**

Dear Mr. Muhlherr:

On March 14, 2003, the Islander East Pipeline Company, LLC ("Islander East") submitted a Water Quality Certificate (WQC) application for discharges to the waters of the State pursuant to Section 401(a)(1) of the Federal Clean Water Act (the "Act"), as amended. The proposed activity includes the upgrade of an existing natural gas transmission pipeline system in Cheshire and North Haven and installation of a new 24" diameter pipeline in East Haven, North Branford and Branford continuing across Long Island Sound to Brookhaven, New York.

Determination

The proposed work was evaluated for compliance with the applicable provisions of sections 301, 302, 303, 306 and 307 of the Act, the State of Connecticut's Water Quality Standards including the Connecticut Anti-Degradation Implementation Policy, and Water Quality Criteria adopted pursuant to Section 22a-426 of the Connecticut General Statutes and the goals and policies of Chapter 444 of the Connecticut General Statutes. **Based on this review, the Department of Environmental Protection ("Department") has determined that the proposed work in the proposed location is inconsistent with the Water Quality Standards. The work, as proposed, would adversely affect water quality and prohibit the existing and designated uses of the receiving waters. Accordingly, the Department hereby denies Water Quality Certification of Application #200300937 in accordance with Section 401(a)(1) of the Clean Water Act.**

Connecticut Water Quality Standards

Section 303 of the Act requires that states adopt surface water quality standards. These state water quality standards are submitted to, and must be approved by, the Administrator of the U. S. Environmental Protection Agency ("EPA"). State water quality standards provide the basis for water quality management decision-making by the Department and are a critical component in the state's efforts to achieve the fundamental goal established in the Act of protecting and maintaining the physical, chemical, and biological integrity of the nation's waters. At a minimum, the standards must be sufficient also to meet the interim goals of the Act for achieving water quality conditions that allow for protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water.

As required by the Act, Connecticut's Water Quality Standards include:

- beneficial designated uses for each waterbody (*e.g.*, aquatic life, swimming, drinking, navigation, *etc.*) that are assigned on the basis of the waterbody's classification;
- narrative and/or numeric water quality criteria that must be met to support each designated use; and

- policy statements including an anti-degradation policy and implementation procedures designed to maintain and protect water quality in high quality waters, and protect and maintain existing uses in all cases.[1]

These elements do not stand alone, but must be read in such a fashion as to be internally consistent within the Water Quality Standards and consistent with the goals of the Act.

Coastal Water Classification and Designated Uses

Islander East has proposed a regulated activity in coastal waters of the State in the nearshore waters of the Thimble Islands complex in the Town of Branford. Overall, chemical and bacteriological water quality conditions in this location are consistently excellent. Long-term water quality monitoring initiated in 1991 by the Department as part of the Long Island Sound Study[2] shows that only rarely are these waters subjected to the impacts of low dissolved oxygen conditions that generally develop each summer in areas farther to the west in Long Island Sound[3]. The resulting water quality classifications for this region are SB/SA and SA[4]. The SB/SA Classification signifies that the water quality management goal is to achieve full support of all Class SA designated uses. Class SA waters are designated for habitat for marine fish, other aquatic life and wildlife; shellfish harvesting for direct human consumption; recreation; industrial water supply; and navigation.[5]

In concert with excellent water quality, the Thimble Islands region also exhibits an abundance of high quality habitat. These physical conditions combine to support a diverse and abundant assemblage of marine life. The Thimble Islands typically emerge from relatively shallow waters, approximately 30' deep. In addition to this significant area of shallow water-land interface where biological diversity is rich and productive, this area hosts unique subtidal conditions including submerged rock reefs and a diversity of benthic habitats that range from soft mud to compacted sand and gravel all of which contribute to the biological integrity of the aquatic ecosystem. The United States Fish and Wildlife Service, for example, has designated this particular area a "significant habitat complex in need of protection."[6] In addition to providing habitat for a variety of demersal and pelagic species, these diverse bottom habitats of the Thimble Islands region also support eastern oyster (*Crassostrea virginica*), hard clams (*Mercenaria mercenaria*), soft clams (*Mya arenaria*), blue mussels (*Mytilus edulis*), and channel whelk (*Busycon canaliculatum*).

These species, clams and oysters in particular, support significant commercial shellfish harvesting operations. The pipeline corridor, as proposed by Islander East, is sited within and adjacent to extensive shellfish grants, leased shellfish grounds and public shellfishing lands. The submerged land through which the pipeline route is proposed that is not currently leased is also productive shellfish habitat and is significant for potential future expansion of the shellfish industry, particularly in as much as the western reaches of Long Island Sound have been more affected in recent decades by lower dissolved oxygen levels and other environmental impacts that affect shellfish and benthic abundance. The shellfish industry

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[1] See Appendix A. State of Connecticut, Department of Environmental Protection, Water Quality Standards.
[2] Initiated in 1985, the Long Island Sound Study (LISS) is a partnership of federal, state, and local governments agencies, private organizations and citizens formed to develop and implement a comprehensive conservation and management plan for Long Island Sound. Funding support for the LISS is provided by the Environmental Protection Agency through the National Estuary Program and by the States of Connecticut and New York.
[3] See Appendix B for summary of monitoring program and survey results.
[4] See Appendix C for map of Water Quality Classification areas.
[5] Please refer to Appendix A (Water Quality Standards, pages 15-17) for a more complete description of these classifications and designated uses.
[6] *Northeast Coastal Areas Study: Significant Coastal Habitats of Southern New England and Portions of Long Island, New York* (August, 1991). The United States National Marine Fisheries Service has also designated Long Island Sound as an "Essential Fish Habitat (EFH)."

is an economically-significant and long-established water-dependent use in Connecticut. In fact, Connecticut's nationally-recognized shellfish industry produces the highest quality oysters in the United States. Despite a devastating blow to oyster production from MSX[7] in 1997, the annual commercial landing statistics, provided by the National Oceanic and Atmospheric Administration- Fisheries, Connecticut continues to compete nationally and in 2001 was ranked first in hard clam production on the east coast and second for oyster market harvest.

The shellfishing industry in the Thimble Islands region thrives because of the excellent water quality and exceptional habitat conditions. Of particular importance to maintaining the existing shellfishing use of this area is authorization by the State of Connecticut Department of Agriculture, Aquaculture Division (DA/AD) for harvest of shellfish for direct human consumption. The DA/AD "Approved" designation, which is the most stringent and, therefore, the most difficult to achieve, recognizes that the water is of sufficiently high quality to allow for direct consumption of shellfish from these beds without the requirement for relocation and depuration of the shellfish prior to human consumption (see map in Appendix D). Although many of Connecticut's marine waters are classified SA or SB/SA, the designated areas where suitable habitat exists and monitoring data documents the exceptionally good water quality necessary to receive an "Approved" designation by DA/AD are in fact limited. In general, the waters off Branford support approximately 46% of shellfishing areas approved for direct harvest in eastern Connecticut[8]. A more detailed description of the specific parameters and required criteria relating to authorization for direct harvest of shellfish is referenced in the Water Quality Standards at page seventeen (Appendix A).

Water Quality Impacts and Habitat Alteration

The landward-most segment of pipeline, approximately 3500 feet, is proposed to be installed in-water from Juniper Point utilizing the horizontal directional drilling (HDD) method. At the HDD exit point a pit of approximate dimensions 18' deep x 130' wide x 310' long is proposed to be excavated. From this exit pit, a trench approximately 5' deep x 37' wide x 5520' long is proposed to be dredged to approximately Milepost 12. (A trench width of 37' is based on a 3:1 angle of repose.) The exit pit and 5520' long trench are proposed to be backfilled with bank-run gravel. From Milepost 12 for nine miles to the Connecticut/New York state line, three passes of a sub-sea plow are proposed to: create a trench 5' deep x 25' wide at the top of slope; lay the pipe; and backfill previously sidecast sediment mounds. This proposed installation would include dredging, plowing, backfilling, equipment anchoring, and anchor cable sweeping.

These activities would result in negative impacts to both the water quality and substrate. Turbidity of the water column would be relatively short-term. When this material precipitates out of the water column, it will result in sediment deposition on the benthic substrate. At the request of the Town of Branford's Blue Ribbon Committee[9], John Roberge, P.E., LLC, prepared an assessment of sedimentation impacts associated with pipeline installation as modified by Islander East to mitigate sediment dispersion.[10] The following sediment deposition pattern was estimated in Mr. Roberge's study:

> 1 mm up to 100 meters from the trench centerline (approximately 70 acres); and
> 3 mm up to 40 meters from the trench centerline (approximately 35 acres).

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[7] MSX (multinucleated sphere unknown) is a single-cell parasite that invades the oyster's soft body, grows and divides within the tissue, and eventually overwhelms the normal metabolic processes in the shellfish resulting in death.

[8] Statistics provided by Kelly Streich, DEP Water Bureau

[9] A committee appointed by the Town of Branford First Selectman to review and comment on the Islander East application.

[10] See Appendix E for report dated May 5, 2003 with September 30, 2003 and February 4, 2004 amendments.

The Department has determined that the negative impacts resulting from this depositional layer, in addition to direct substrate disturbance associated with dredging, plowing, backfilling, equipment anchoring, and anchor cable sweeping, are inconsistent with the Water Quality Standards. Pipeline installation would not only temporarily disturb water quality, it would permanently change the substrate and negatively impact the existing aquatic biota that depend on such substrate. The Connecticut Water Quality Standards define biological integrity as the ability of any aquatic ecosystem to support and maintain a balanced, integrated, adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of the natural habitats of a region. The combined assaults of direct habitat disturbance and temporary water quality impacts resulting in sediment deposition negatively impact the overall biological integrity of the Thimbles Islands ecosystem and are therefore inconsistent with Standard No.1 of the Connecticut Water Quality Standards.[11]

Pipeline installation through the Thimble Islands ecosystem will dramatically alter natural habitats and adversely impact the existing community of organisms. As discussed in a study entitled "Macrobenthic Community Structure Along The Proposed Islander East Pipeline Route In Long Island Sound," by Pellegrino[12], there are dramatic differences in community structure associated with a disturbed versus a non-disturbed substrate. Once the original bottom has been disturbed, a soft sediment, referred to as the nephloide layer, covers the bottom and fills in any depressions left on the disturbed surface. Thus, the high-order or late successional stage species such as clams and oysters that lived in the original substrate can no longer exist. The community structure of the original substrate changes to that of early-stage opportunistic species such as polychaete worms. It is uncertain whether the associated diverse assemblage of bottom dwelling organisms currently present in this area could be reestablished. No studies exist from which one may predict a known recovery time for both these benthic communities and the substrate, if, indeed, there is any significant recovery.

Antidegradation Policy

Connecticut's Water Quality Standards include an Anti-degradation policy[13] as required by the Act (see Code of Federal Regulations, Title 40 Part 131.12). In brief, the policy requires that where water quality is better than the criteria established in the Water Quality Standards, such existing high quality must be maintained except under exceptional and very limited circumstances. In addition to addressing issues of quality, the policy mandates that existing uses must continue to be supported in all cases. Consistency with Connecticut's Anti-degradation Policy and the procedures established in the Water Quality Standards to implement the policy is required for all activities regulated by the Department and can serve as the primary basis for Section 401 certification decisions.

As previously described, the pipeline is proposed to be sited within and adjacent to extensive shellfish grants, leased shellfish grounds and public shellfish lands. The discharge of backfill associated with pipeline installation would result in approximately 5.5 acres of nearshore bottom habitat being permanently degraded and rendered unsuitable for supporting the diverse assemblage of shellfish and other bottom dwelling organisms currently inhabiting this area. Because the bank-run gravel would also interfere with harvesting techniques, the area of impact to shellfish harvesting would extend well beyond the 5.5 acres of direct disturbance. While the gravel-filled trench would be 37' wide, the area that the

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[11] Surface Water Quality Standard No. 1 - It is the State's goal to restore or maintain the chemical, physical, and biological integrity of surface waters. Where attainable, the level of water quality that provides for the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water shall be achieved.

[12] Appendix F, Final Report, January 2002, section 4.0.

[13] See Appendix A, Water Quality Standards. The Connecticut Anti-degradation Implementation Policy is found in Appendix E of Water Quality Standards.

commercial shellfish harvesting equipment would need to avoid would be much wider because of the required turning radius of the vessels with gear in tow.

Additionally, the resulting topographic irregularities over the entire 3,700-acre Islander East corridor caused by sedimentation, backfill with gravel, plow utilization, anchor strikes, and cable sweeps will adversely affect the population of resident benthic organisms and shellfish as well as the efficiency and safety of the existing shellfish harvesting operations and handling of shellfish harvesting equipment. The application materials indicate that it is the goal of the applicant to achieve a finished substrate equivalent to the adjacent benthic surface with a proposed acceptable tolerance of +2' to -1'. Based on the experience of the Department with the installation of the Iroquois pipeline in 1991, the Department does not agree that such a minimal impact restoration of the work site contours can, in practice, be achieved. While such a range in tolerance level might be less significant in an area of lower environmental value, where shellfish resources were scarce due to lack of suitable habitat, or where traditional harvest shellfishing techniques were not employed, that is not the case in respect to the area through which the pipeline route has been proposed by Islander East.

Connecticut Coastal Management Act

In addition to meeting Water Quality Standards, Section 22a-98 of the General Statutes, the Connecticut Coastal Management Act ("CCMA"), requires that 401 Water Quality Certificates be consistent with the goals and policies of the CCMA. Due to the extensive scope and wide-ranging area within which work is proposed to be conducted by Islander East, there are a number of CCMA policies that are applicable to the project. The "coastal resources" which are in close proximity to the proposed work include: coastal waters, nearshore waters, offshore waters, islands, rocky shorefront, shellfish concentration areas, tidal wetlands, and general resources, as defined in General Statutes Section 22a-93(7). Each of these resources is associated with a set of corresponding resource policies which constitute the enforceable policies of the CCMA. See Section 22a-92 of the General Statutes. In addition, specific coastal resources use policies (General Statutes Section 22a-92) and adverse impacts (General Statutes Section 22a-93(15)) are identified in the CCMA and must be used in conjunction with the applicable resource policies. See attached Objection of Coastal Management Consistency, dated July 29, 2003, to the Islander East Pipeline Company, LLC, for a more detailed analysis and discussion of the preceding resource issues and concerns.[14] The Department emphasizes that the proposed pipeline installation will adversely impact existing, water dependent uses. The enforceable policies of the CCMA mandate preference being given to water dependent uses, defined in Section 22a-93(16), and, in particular, to the priority development of particular water dependent uses such as commercial and recreational fishing. Moreover, the CCMA, Section 22a-93(17) defines "Adverse impacts on future water- dependent development opportunities" and "adverse impacts on future water-dependent development activities" to include the following situations that apply to the Islander East proposed pipeline route: "(A) locating a non-water-dependent use at a site that (i) is physically suited for a water-dependent use for which there is a reasonable demand or (ii) has been identified for a water-dependent use in the plan of development of the municipality or the zoning regulations; (B) replacement of a water-dependent use with a non-water-dependent use[.]" The area of impact lies in leased and designated shellfish beds, and, as detailed above, the impacts associated with the pipeline laying activities in the off-shore waters of the Sound will entail the destruction of that habitat area and the replacement of a water dependent use (commercial shellfishing) with a non water dependent use (pipeline installation for natural gas transmission).

[14] See Appendix G. In Section 22a-93(15), "Adverse impacts on coastal resources" specifically includes the degrading of water quality, the destruction of essential shellfish habitat and the alternation of the "natural components of the habitat."

Summary

The Department therefore finds that Islander East's proposed work is inconsistent with Connecticut's federally-approved Water Quality Standards. Due to the sensitive nature of the receiving waters and the ecological system dependent upon such water, the Department has determined that the regulated activity in the proposed location will permanently alter the existing high quality physical and biological integrity and productivity of this area to the extent that the existing uses for habitat for marine fish, other aquatic life and wildlife and shellfish harvesting for direct human consumption will be impaired. Essential shellfish habitat will be lost due to the temporary and permanent alteration of the benthic environment resulting from the proposed work. Finally, the siting of the non-water dependent pipeline through prime shellfish habitat would cause a significant and permanent adverse impact to a water-dependent use by displacing the water-dependent use of shellfishing with the non-water-dependent use of natural gas transmission.

Sincerely,

Arthur J. Rocque, Jr.
Commissioner

AJR/slj

cc: Acting District Engineer, Brian A. Green, US Army Corps of Engineers
Magalie Salas, Federal Energy Regulatory Commission
Douglas Brown, NOAA/Office of Ocean and Coastal Resource Management
David Kaiser, NOAA/Office of Ocean and Coastal Resource Management
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Joseph C. Reinemann, Islander East Pipeline Company, LLC